UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,536	07/18/2000	Gregory S. Bayley	TRW(AP)4566	8672

26294 7590 09/22/2004

TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P.
526 SUPERIOR AVENUE, SUITE 1111
CLEVEVLAND, OH 44114

EXAMINER	
ILAN, RUTH	
ART UNIT	**PAPER NUMBER**
3616	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/618,536	BAYLEY ET AL.	
	Examiner	Art Unit	
	Ruth Ilan	3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,7,8,11 and 13-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,5,7,8,11,13,21 and 22* is/are allowed.

6)☒ Claim(s) *1,3,14-20 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 24, 2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3, 14-20, 23, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Based on the disclosure and the Applicant's Remarks of Paper No. 13,16 and of June 24, 2004 it is still unclear whether the limitation in claim 1 that is "said inflation fluid source comprising means for inflating said inflatable vehicle occupant protection device to a pressure that is a defined mathematical function of said thickness of said inflatable vehicle occupant protection device..." is really directed to a method of designing an air bag/inflator system, including an intermediary step and as such the claim is in a sense a hybrid claim directed to a method of designing an air bag, and not the apparatus itself. For the purposes of

examination, and based on Applicant's arguments of paper No. 6, which are addressed below, it will be assumed that the apparatus is being claimed. If the Applicant states for the record that the means for inflating includes a point on a curve defined by the specific exponential equations (as claimed in non 112 6th language in claim 2 for instance, and not the method of designing, based on curve fitting the data and the various other steps as disclosed, then the scope of the limitations will not be unclear. The same issues hold for claim 25, which includes "a mathematical equation that expresses...".

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 3, and 14-20, 23, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cherry (US 6,022,044) in view of Bohman et al. (Paper no. 98-S8-O-07, 16th ESV Conference June 1-4, 1998 Windsor Canada) Cherry is an inflatable vehicle occupant protection device that meets the structural limitations as recited in these claims. Cherry additionally discloses that the intended purpose of the air bag is to protect an occupant in the event of a side impact or rollover event. Cherry is silent as to the specific thickness/pressure/head velocity relationship. Bohman et al. teaches that it is known in the art to inflate an air bag of the type disclosed by Cherry to a predetermined thickness (70mm) and a predetermined pressure (1.5 bar) which is sufficient to prevent the head of an occupant traveling at a predetermined velocity (7 m/s) from striking the side structure through the air bag (bottoming out, as taught in

examiner numbered page 6, 1st col. Lines 1-5.) Please note that the limitation "to a pressure that is a defined mathematical function of said thickness of said inflatable vehicle occupant protection device..." in claim 1 has been given little patentable weight, since the claims are apparatus claims and are not directed to the method of design. The Examiner understands that it is Applicant's intention to invoke 112 6th paragraph. The means for inflating, when the Examiner looks to the specification for guidance, based on 112 6th practice, is an inflator known in the art. The method of selecting the inflator, based on the derived equation, is not germane to the patentability of the device. The airbag is inflated to a given pressure, based on thickness. Additionally, it is the Examiner's position that Bohman et al. teaches a relationship between pressure and thickness, and that the method of deriving that relationship is not germane to the issue of patentability of an apparatus claim. Additionally, Bohman et al. teaches that such predetermined criteria are useful when avoiding bottoming out or strikethrough of the air bag. It would have been obvious to one having ordinary skill in the art at the time of the invention to inflate the air bag of Cherry to the thickness and pressure of Bohman et al. in order to avoid bottoming out, as taught by Bohman et al. and to provide a safe side air bag device. Additionally, the Examiner notes that there are any number of defined mathematical functions that include the point 70mm and 1.5 bar, including, as described in claim 25, an exponential one. Some examples of mathematical functions that include these points are $P=kT$, where y is the pressure in bar, T is the thickness and $k=(1.5/70)$ An exponential equation that includes this point is $P=KT^2$ where P is the pressure in bars, T is the thickness and $K=(1.5/(70)^2)$ and as such Bohman teaches a relationship

between pressure and thickness that can be defined as a mathematical equation. If however, the defined mathematical equation includes more than one point, that is it is a selection process for pressure as a function of thickness, then this limitation is a design step and is given no patentable weight. Regarding claim 3, the air bag criteria of Bohman et al. indicate that the air bag thickness is 70 mm, rather than 120-150 mm. The Examiner takes Official Notice that it is known in the art that based on fundamental concepts of momentum, the thicker a side curtain of a given pressure is, the safer it will be for the occupant during impact. It would have been obvious to one having ordinary skill in the art at the time of the invention to make the air bag of Cherry in view of Bohman et al. thicker, in order to provide a safer system during impact.

Allowable Subject Matter

6. Claims 2, 5, 7, 8, 11, 13, 21 and 22 are allowed.

Response to Arguments

7. Applicant's arguments have been considered but they are not persuasive. It continues to be the Examiner's position that based on the prosecution history as a whole, it appears that the Applicant intends the limitation "said inflation fluid source comprising means for inflating said inflatable vehicle occupant protection device to a pressure that is a defined mathematical function of said thickness of said inflatable vehicle occupant protection device..." to be directed to a method of designing the combination of the air bag and inflator, and as such the scope of the claim is unclear. For the record, it is clear that the Applicant intends to invoke 112 6th paragraph. The Applicant states that the language of claim 1, particularly the phrase "means for

inflating..." is proper means-plus-function language, fully supported by the specification, because the means is the inflator, and the function is to inflate the curtain to a pressure that is a predetermined function of the thickness sufficient to prevent a head of an occupant from striking the side structure. As previously stated, the Examiner is not suggesting that claim 1 contains improper "means-plus-function" language, and has interpreted this claim in the above described manner, that is to include an inflator that inflates the curtain to a pressure that is a predetermined function of the thickness. It is the Examiner's position that the language "defined mathematical equation" is unclear, because it appears to be directed to an intermediary step in the design process of the air bag and the inflator combination.

The Applicant's remarks with regard to the prior art rejection support the Examiner's position. The Examiner notes with interest that the Applicant's arguments with regard to the prior art are directed to the manner in which the prior art design process differs from the instant process. The Applicant indicates that the instant case differs from the prior art because the prior art uses empirical data to determine working characteristics, whereas the instant invention eliminates the need for experimentation because the pressure is a defined mathematical function of curtain thickness. It is the Examiner's position that the method of designing the combination of the inflator and the air bag is not germane to the issue of patentability of a device that contains the same structure and performs the same function. [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of

production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) See MPEP 2113. Cherry in view of Bohman et al. teaches the structure, that is a side curtain airbag with an inflator, and additionally teaches the function, that is inflate an air bag of the type disclosed by Cherry to a predetermined thickness (70mm) and a predetermined pressure (1.5 bar) which is sufficient to prevent the head of an occupant traveling at a predetermined velocity (7 m/s) from striking the side structure through the air bag (bottoming out, as taught in examiner numbered page 6, 1st col. Lines 1-5.) The derivation of the "predetermined-ness" of the relationship between pressure and thickness is incidental, since it is an intermediary step.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth Ilan whose telephone number is 703-306-5956. The examiner can normally be reached on Monday-Friday, 8:30-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 703-308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ruth Ilan
Primary Examiner
Art Unit 3616

RI 9/20/04

Ruth Ilan
9/20/04